

I claim:

1. A method of estimating the value at time 0 of a pharmaceutical R&D cash flow, said method comprising calculating V_0 in accordance with the equation:

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$$V_0 = \sum_{y=0}^n \left(\frac{I_y R_0}{R_y (1+k)^y} - \frac{E_y R_0}{R_y (1+k)^y} \right), \text{ where } V_0 \text{ is the value at time 0,}$$

where y is the time, where I_y is the income received at time y , where R_0 is the risk mitigated at time 0, where R_y is the risk mitigated at time y , where k is the discount rate, where E_y is the expense paid at time y , and where n is the
10 time of the last income or expense.

2. The method of claim 1 where said time 0 is the present time and where V_0 is the risk-adjusted net present value of a pharmaceutical R&D cash flow.

3. The method of claim 1 where said income is selected
15 from the group consisting of investments, milestone payments, royalty income, pharmaceutical royalty income, licensing fees, sales revenue, orphan drug tax credits, tax credits, grants, revenue generated by debt issuance, and revenue generated by equity sales.

20 4. The method of claim 1 where said expense is selected from the group consisting of investments, milestone payments, royalty payments, pharmaceutical royalty payments, debt payments regulatory approval expenses, licensing fees,

clinical trial expenses, animal study expenses, research expenses, manufacturing expenses, marketing expenses, overhead expenses, taxes, and development expenses.

5. A method of claim 1 where k is the risk-free interest rate.

6. A method of claim 1 where at least one said expense, said risk, or the time of a pharmaceutical R&D phase is estimated to be about average.

7. A method of claim 6 where said average expense is selected from the group consisting of a phase 1 clinical trial expense of about \$575,000, a phase 2 clinical trial expense of about \$2,300,000, a phase 3 clinical trial expense of about \$17,250,000, an animal study expense in support of a phase 1 clinical trial of about \$500,000, an animal study expense in support of a phase 2 clinical trial of about \$1,000,000, an animal study expense in support of a phase 3 clinical trial of about \$1,500,000, and an approval-associated expense of about \$1,300,000.

8. A method of claim 6 where said average risk R_y is selected from the group consisting of about 10% for a preclinical phase, about 20% for a phase 1 clinical trial phase, about 30% for a phase 2 clinical trial phase, about 67% for a phase 3 clinical trial phase, and about 83% for an approval phase.

9. A method of claim 6 where said average time of a pharmaceutical R&D phase is selected from the group consisting of about 6 years for a preclinical phase, about 9 months for a phase 1 clinical trial, about 1.5 years for a phase 2 clinical trial, about 3.5 years for a phase 3 clinical trial, about 1.5 years for an approval phase, and about 10 years for a revenue phase.

10. A method of estimating the value, at time 0, of a debt issued on a pharmaceutical R&D cash flow, said method comprising calculating V_0 in accordance with the equation: $V_0 = R_0 F (1+q-w)^y$, where R_0 is the risk mitigated at time 0, F is the face value of said debt, q is interest rate of said debt, w is the risk-free interest rate, y is the time said debt is due to be repaid, and $R_0 F$ is the discount price.

11. A financial security comprising a debt issued at time 0 on a pharmaceutical R&D cash flow, said security comprising a face value, at least one default term, an interest rate, at least one repayment term, and a discount price, where said discount price D is calculated in accordance with the equation $D = R_0 F$, where R_0 is the risk mitigated at time 0, and where F is said face value.

12. The security of claim 11 where said debt is securitized by intellectual property that, but for license to said intellectual property, the making, using, or selling

of said pharmaceutical would infringe upon at least one
valid claim of said intellectual property.

13. The security of claim 11 where said pharmaceutical is
at a preclinical phase of development and where said R_0 is
5 about 10%.

14. The security of claim 11 where said pharmaceutical is
at a phase 1 clinical trial phase of development and where
said R_0 is about 20%.

15. The security of claim 11 where said pharmaceutical is
10 at a phase 2 clinical trial phase of development and where
said R_0 is about 30%.

16. The security of claim 11 where said pharmaceutical is
at a phase 3 clinical trial phase of development and where
said R_0 is about 67%.

15 17. The security of claim 11 where said pharmaceutical is
at an approval phase of development and where said R_0 is
about 83%.

18. The security of claim 11 where at least a portion of
said debt is convertible debt.

20 19. The security of claim 11 where said default term is
selected from the group consisting of a failure to pay a
scheduled debt repayment, a failure to begin a phase 1
clinical trial by a predetermined time, a failure to begin a
phase 2 clinical trial by a predetermined time, a failure to

begin a phase 3 clinical trial by a predetermined time, a failure to file an NDA with the US FDA by a predetermined time, a failure to file an ANDA with the US FDA by a predetermined time, a failure to file a BLA with the US FDA by a predetermined time, a failure to be granted regulatory approval by a predetermined time, a failure to be granted US FDA approval by a predetermined time, a failure to be granted EMEA approval by a predetermined time, a failure to enter into a contract with a third party by a predetermined time, and the failure to meet a contractual obligation with a third party.

20. The security of claim 11 where the ability to repay said debt at said repayment term is estimated from projected net cash flow of the revenue phase.

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